

WHAT IS CLAIMED IS:

1. An evaluation system for operating conditions applied to a vehicle, comprising:

a controller which functions to:

determine whether or not an operation which worsens fuel economy has been performed;

when it is determined that the operation which worsens fuel economy has been performed, respectively calculate an actual amount of consumed fuel and an amount of fuel which would have been consumed had the operation which worsens fuel economy not been performed; and

calculate an amount of fuel consumed in excess due to the operation which worsens fuel economy by subtracting the amount of fuel which would have been consumed had the operation which worsens fuel economy not been performed from the actual amount of consumed fuel,

the evaluation system further comprising a display device for displaying the calculated excess fuel consumption.

2. The system as defined in Claim 1, wherein the controller further functions to determine that the operation which worsens fuel economy has been performed when the vehicle accelerates by a greater acceleration than a predetermined rapid acceleration determination value.

3. The system as defined in Claim 1, wherein the controller further functions to determine that the operation which worsens fuel economy

has been performed when the vehicle decelerates by a greater deceleration than a predetermined rapid deceleration determination value.

4. The system as defined in Claim 1, wherein the controller further functions to determine that the operation which worsens fuel economy has been performed when the vehicle runs at a higher vehicle speed than a specified vehicle speed.

5. The system as defined in Claim 1, wherein the controller further functions to:

determine whether or not an upshift is possible based on the operating conditions of the vehicle at present and following an upshift; and

determine that the operation which worsens fuel economy has been performed when the vehicle runs without performing an upshift under conditions in which an upshift is possible.

6. The system as defined in Claim 5, wherein the controller further functions to determine that an upshift is possible when an engine rotation speed following an upshift is higher than a specified rotation speed, and a drive force at full load following an upshift is greater than a current running resistance.

7. The system as defined in Claim 1, wherein the controller further functions to determine that the operation which worsens fuel economy

has been performed when racing is performed while the vehicle is stationary.

8. The system as defined in Claim 1, wherein the controller further functions to rank the driving skill of a driver based on the frequency with which operations which worsen fuel economy are performed, and
the display device displays the driving skill rank.

9. The system as defined in Claim 2, wherein the controller further functions to:

rank the driving skill of a driver based on the frequency with which operations which worsen fuel economy are performed; and

reduce the rapid acceleration determination value as the driving skill rank increases.

10. The system as defined in Claim 3, wherein the controller further functions to:

rank the driving skill of a driver based on the frequency with which operations which worsen fuel economy are performed; and

reduce the rapid deceleration determination value as the driving skill rank increases.

11. The system as defined in Claim 1, wherein the controller further functions to:

calculate a drive force of the vehicle based on the vehicle operating conditions;

calculate an excess drive force by subtracting a running resistance from the calculated drive force; and

calculate an excess drive force ratio by dividing the excess drive force by a drive force at full load, and

the display device displays the calculated excess drive force ratio.

12. The system as defined in Claim 11, wherein the controller further functions to:

determine whether or not the vehicle is running at a higher vehicle speed than the specified vehicle speed;

calculate an air resistance actually faced by the vehicle based on a current vehicle speed;

calculate an air resistance faced by the vehicle when running at the specified vehicle speed;

calculate an excess air resistance by subtracting the air resistance received when running at the specified vehicle speed from the actually faced air resistance; and

when it is determined that the vehicle is running at a higher vehicle speed than the specified vehicle speed, calculate as an excess drive force a value obtained by adding the excess air resistance to a value obtained by subtracting a running resistance from the calculated drive force.

13. The system as defined in Claim 11, wherein the controller further functions to:

determine whether or not an upshift is possible based on the driving conditions of the vehicle at present and following an upshift;

calculate a fuel consumption amount assuming an upshift has been performed based on the operating conditions of the vehicle following an upshift;

calculate a reduced fuel consumption amount assuming an upshift has been performed by subtracting the fuel consumption following an upshift from a current fuel consumption; and

when an upshift is possible, calculate as the excess drive force a value obtained by converting the reduced fuel consumption amount reduced by an upshift into a drive force.

14. The system as defined in Claim 11, wherein the controller further functions to rank the driving skill of a driver based on the frequency with which operations which worsen fuel economy are performed, and

the display device modifies a display format of the excess drive force ratio in accordance with the driving skill rank.

15. The system as defined in Claim 14, wherein the display device displays the excess drive force ratio in a bar graph format such that the length of the displayed bars increases as the driving skill rank rises even at an identical excess drive force ratio.

16. The system as defined in Claim 1, wherein the controller further functions to generate a warning to a driver when it is detected that the operation which worsens fuel economy has been performed.

17. The system as defined in Claim 1, further comprising a recording

device for recording the calculated excess fuel consumption,

wherein the display device displays the excess fuel consumption recorded on the recording device after driving is completed.

18. The system as defined in Claim 17, wherein the display device displays the excess fuel consumption divided into the causes thereof.

19. The system as defined in Claim 1, further comprising a recording device for recording the frequency with which operations which worsen fuel economy are performed,

wherein the display device displays the frequency with which operations which worsen fuel economy are performed, recorded on the recording device, after driving is completed.

20. The system as defined in Claim 19, wherein the display device displays the frequency with which operations which worsen fuel economy are performed according to the type of operation.

21. An evaluation method for the operating conditions of a vehicle, comprising:

determining whether or not an operation which worsens fuel economy has been performed;

when it is determined that the operation which worsens fuel economy has been performed, respectively calculating an actual amount of consumed fuel and an amount of fuel which would have been consumed had the operation which worsens fuel economy not been

performed; and

calculating an amount of fuel consumed in excess due to the operation which worsens fuel economy by subtracting the amount of fuel which would have been consumed had the operation which worsens fuel economy not been performed from the actual amount of consumed fuel.